FINDING OF NO SIGNIFICANT IMPACT

Geophysical Institute Seismic Station Upgrade and Repeater Installation At Several Locations in Denali National Park and Preserve

The National Park Service (NPS) has prepared an environmental assessment (EA) that evaluates a project proposed by the Geophysical Institute, University of Alaska. The project would upgrade existing seismic stations at Wickersham Dome and Thorofare Mountain, install a replacement transceiver and antenna at Healy Mountain, and install a new transceiver within the designated wilderness of Denali National Park and Preserve.

The data obtained from upgrading seismic equipment and transmitters within Denali National Park and Preserve may provide a better understanding of the nature of the Denali Fault and make more accurate assessments of seismic geohazards in the Denali and Interior Alaska regions. The Wickersham Dome and Thorofare Mountain seismic stations would also contribute to a better understanding of global plate tectonics and mountain building processes associated with the Alaska Range.

The existing seismic signals from Wickersham Dome and Thorofare Mountain are currently being transmitted directly from the Thorofare Mountain repeater to the Healy Mountain repeater. This radio link is not in a direct line-of-sight which may cause occasional data loss during times of poor radio signal propagation. Due to the fact that VHF frequencies are being transmitted and readily diffract around terrain features, the existing radio link has worked in the past. The present radio link between Thorofare Mountain and Healy Mountain would not, however, work for the equipment upgrade, with spread spectrum radios that operate above 900 MHz. Radio waves at this frequency do not easily diffract and therefore require a direct line-of-sight transmission path. To transmit data using spread spectrum radios, a new repeater site would have to be installed at Sable Mountain or Double Mountain.

The NPS preferred alternative **(Alternative 2)** includes equipment upgrades at the existing seismic stations and constructing a new repeater site high up on a slope of Double Mountain, approximately three and one-half miles east of the Igloo Campground.

The Double Mountain site would require a single repeater, directional antenna and batteries, all within a gray, 4 ft. x 4 ft. x 5 ft. fiberglass enclosure. Two solar panels would be mounted on the south facing side of the enclosure roof.

Proposed equipment upgrades at Wickersham Dome and Thorofare Mountain consists of a broad band digital seismometer on a 2 ft. x 2 ft. concrete pad, a free wave spread-spectrum transceiver, and non-spillable gell cell batteries as primary batteries and dry alkaline backup batteries. The transceiver and batteries would be located in the NPS sheds currently housing seismic and radio transmitting equipment at Wickersham Dome and Thorofare Mountain. The seismometer would be hidden among the rocks near the existing seismometer. Two solar panels would be added to the existing array of panels at Wickersham Dome and 3 solar panels would be added to the Thorofare Mountain solar array. The new antennas would be smaller but the same height as existing antenna, standing 10 ft. high at Wickersham Dome and 20 ft. high at Thorofare Mountain. The Healy Mountain repeater upgrade would include a spread-spectrum transceiver

and a new antenna. No batteries or solar panels would be necessary at this site since commercial power is available.

All equipment would be helicopter transported into the project locations. Installation would occur during the summer season of 2003 and should be completed with two days of visits to each site. An annual visit to the seismic sites would be planned to replace back-up batteries and conduct routine maintenance. Occasionally, system malfunctions may require a special visit for repairs. Thorofare and Healy Mountain can be reached on foot for maintenance purposes provided that it is not necessary to haul heavy equipment to the sites.

Public Involvement
A 35-day public review of the EA was conducted from November 19, 2002 to December 23, 2002. The press release announcing the EA was mailed to local media and the EA was posted on the park's web site and was mailed to 20 agencies, organizations, and individuals. Four comment letters was received on the EA. Three commenters fully supported the preferred alternative.

The National Parks and Conservation Association also supports the proposal but suggests that the Wilderness Act would limit helicopter access to the Double Mountain, Thorofare and Healy Mountain sites. The NPS agrees that administrative use of helicopters to access these sites should be kept to a minimum to protect wilderness resources. The park will use a minimum requirement/minimum tool wilderness review process to evaluate all requests for mechanized access to the sites. The Healy Mountain site was erroneously placed in designated wilderness in the EA.

The Geophysical Institute personnel have shown a willingness to work early in the season before most visitors arrive or to hike to sites when heavy equipment is not carried. Many years of experience at the Thorofare site has shown that the weather window of opportunity is often short for scheduled maintenance or installation at these high elevation locations. The Double Mountain location was partially chosen because there is no easy way to hike to it, and helicopter access is the only safe way to reach the site, much less carry equipment or a heavy battery to it.

Alternatives
Two alternatives were evaluated in the EA, in addition to the NPS preferred alternative. Briefly, those alternatives were:

Alternative 1: No-Action. No new sites would be developed for an additional repeater site. Existing use of analog equipment would continue at Thorofare Mountain, Wickersham Dome, and Healy Mountain.

Alternative 3: Equipment Upgrade at Existing Seismic Stations and Addition of a Transceiver at Sable Mountain. A repeater site would be developed near the top of Sable Mountain. The equipment installed would be the same as proposed for Double Mountain in the preferred alternative. Existing stations would be upgraded and maintained the same as in the preferred alternative.

Mitigation and Monitoring
Mitigation to be taken in conjunction with implementing the NPS preferred alternative includes:

- Geophysical Institute personnel will schedule maintenance trips prior to the opening of the Denali Park Road whenever possible.
- Activities associated with the seismic equipment upgrade will occur during regularly scheduled maintenance visits. There would be no additional helicopter use at Thorofare and Healy Mountains or Wickersham Dome for the proposed seismic equipment upgrades.
- The Thorofare and Healy Mountain sites will be reached on foot for maintenance purposes provided that it is not necessary to haul heavy equipment to the sites.
- When Skyline Drive is in good driving condition, high-clearance four-wheel drive vehicles can be used to access Wickersham Dome.
- Both the current and the upgraded systems would run in parallel for up to a year so that a comparison between data can be made. After comparisons confirm that the upgraded system is functioning well, the old equipment (batteries, VHF antennae, seismometers, etc.) will be removed from Thorofare and Healy Mountain, and Wickersham Dome.
- If cultural resources are encountered during the project, work will not proceed until the Superintendent has been notified.

Environmentally Preferred Alternative
Alternative 1 (No Action) is identified as the Environmentally Preferred Alternative because it affects wildlife and vegetation the least and does not affect wilderness resource values. This alternative, however, does not provide support for upgraded scientific investigations into geophysical movements within the earth's crust and their impact on the surface.

Environmental Consequences of the NPS Preferred Alternative
The NPS has determined that the preferred alternative can be implemented with no significant adverse effect to the natural or cultural resources as documented by the EA and briefly summarized below.

Vegetation/Wetlands. The removal of about 28 square feet of alpine vegetation will have no discernible effect on the community types, which occupy extensive areas of dry slopes in the Alaska Range. No wetlands are involved.

Wildlife/Habitat. A negligible amount of Dall sheep habitat would be removed. Maintenance flights would temporarily create an avoidance zone but the impact from the displacement would be temporary and limited.

Visitor Experience/Visual Quality. The Double Mountain instrument enclosure would not be seen from the park road, and would not be on a likely hiking route. The equipment upgrades at the other sites would have a negligible impact.

Wilderness. The impact from the new site on Double Mountain and helicopter use associated with the installation and annual maintenance would have negligible impacts on wilderness resource values.

Park Management. Seismic data collection and interpretation would improve. This frequency range is well above the range of NPS radios and would not cause interference with Denali National Park and Preserve communication systems.

Decision
The National Park Service's decision is to select the NPS preferred alternative. The decision includes mitigation measures on wilderness access as identified in the FONSI.

Rationale for the Decision
The NPS preferred alternative is chosen because it best meets improved seismic data objectives and does so with similar or fewer impacts to park resources than other action alternatives. The Sable Mountain ridgeline is a common wilderness recreation objective and would be compromised by a communications installation. The Double Mountain site meets the technical needs of the project but is difficult to get to for visitors. The no-action alternative does not support the technological advance inherent in the new seismometers.

This preferred alternative is consistent with the 1986 Park General Management Plan, National Park Service Management Policies, and the relationship between the NPS and the University of Alaska dating back to the 1964 Good Friday earthquake.

Adverse impacts such as temporary motorized access into designated wilderness, removal of a small quantity of alpine habitat, and construction of a permanent repeater site on Double Mountain will be temporary and/or negligible in effect. These impacts will not result in an impairment of park natural resources fulfilling specific purposes identified in legislation establishing the park or key to the natural or cultural integrity of the park and will not violate the NPS Organic Act.

The preferred alternative complies with the Endangered Species Act and the National Historic Preservation Act. There will be no significant restriction of subsistence activities as documented by the Alaska National Interest Lands Conservation Act, Title VIII, Section 810(a) Summary Evaluation and Findings.

I find that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and the regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement will not be prepared.

Recommended:_____
Superintendent, Denali National Park and Preserve Date

Approved:_____
Regional Director, Alaska Region Date